10. Ramiro

Program Name: Ramiro.java　　　　**Input File: ramiro.dat**

In 1950, Richard Hamming introduced the concept of Hamming distance. The Hamming distance between two strings of equal length is the number of positions at which the corresponding symbols are different.

Ramiro needs your help in computing the Hamming distance between hexadecimal strings. Recall, that each hex digit can be represented as four bits. For example, A in base 16 is equivalent to 1010 in base 2 and 8 in base 16 is equivalent to 1000 in base 2. The resulting Hamming distance between the two hex strings A and 8 would be 1.

$$1010$$
$$\underline{1000}$$
$$✓✓\text{x}✓$$

Your task is to determine how many different bits are present, given the two hexadecimal strings of length 8.

Input: Input starts with a line containing an integer N (1<=N<=10). The following N lines each contain two hexadecimal strings of length 8 separated by a space.

Output: Output the Hamming distance between each of the two hexadecimal strings.

Sample Input:
```
6
FFFFFFFF 00000000
01234567 89ABCDEF
060A08AE C01D0041
BA26F57D CD3B689F
03660000 00007390
AAAAA57D AAAAA3B6
```

Sample Output:
```
32
8
16
19
13
7
```